FluWatch

Public Health Agency of Canada | Agence de la santé publique du Canada

October 14 to October 20, 2012 (Week 42)

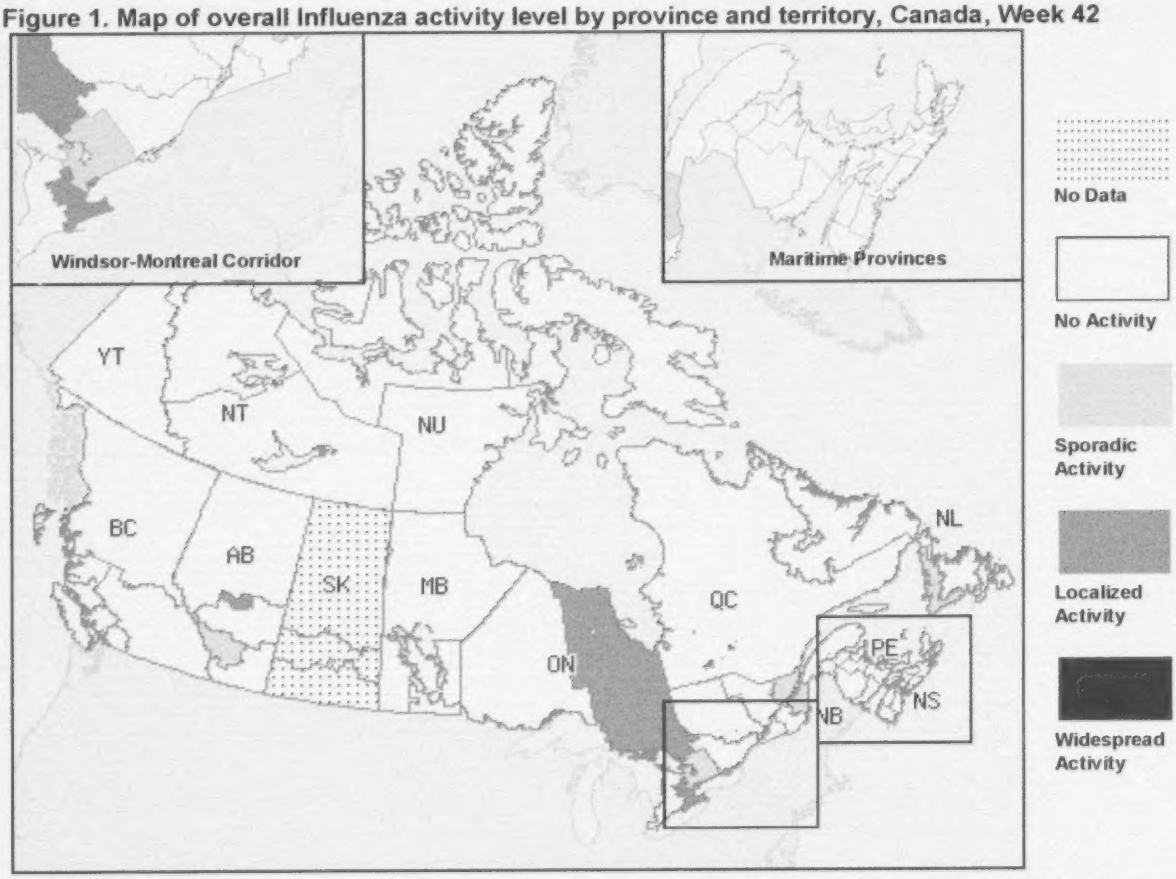
Overall Influenza Summary

- Influenza activity in Canada remains low and was similar to the previous week
- In week 42, a total of 17 laboratory detections of influenza were reported, all of which were for influenza A viruses [8 A(H3), 1 A(H1N1)pdm09, 8 A(un-subtyped)]
- Two influenza outbreaks in long-term care facilities were reported in week 42
- One influenza A-associated hospitalization (in a person ≥65 years of age) was reported in week 42
- The ILI consultation rate increased in week 42 to 18.0 per 1,000 patient visits but is within the expected level for this time of year

Influenza Activity (geographic spread) and Outbreaks

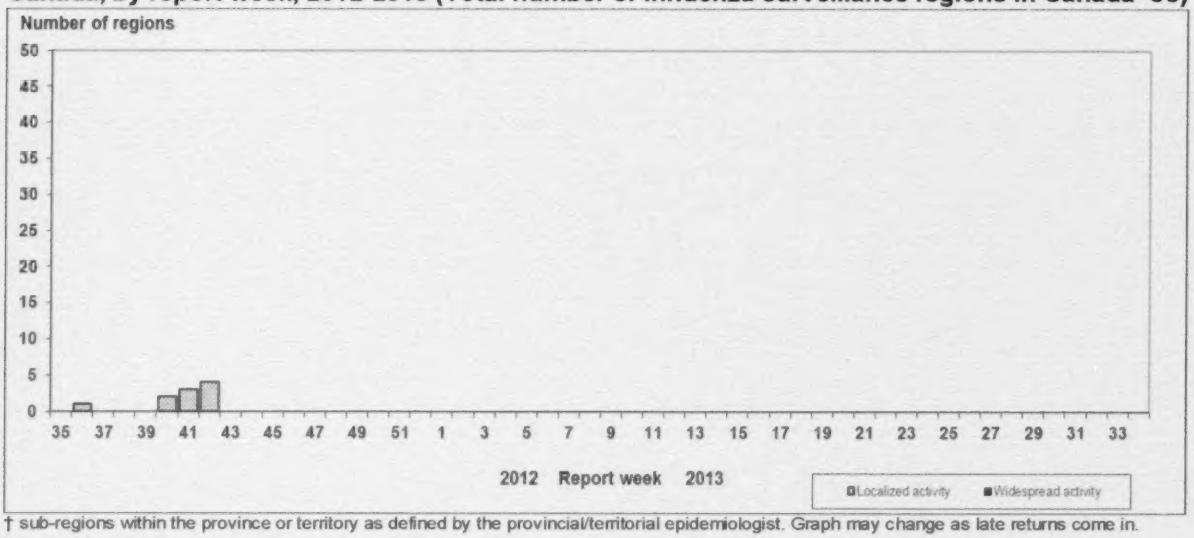
In week 42, 4 regions (within AB & ON) reported localized activity, 4 regions (within AB, ON, QC & NL) reported sporadic activity and the rest reported no activity (see Figure 1). Note that data was not received from SK for week 42. Two new influenza outbreaks were reported in week 42 and both were in long-term care facilities (Figure 3).

Figure 1. Map of overall Influenza activity level by province and territory, Canada, Week 42



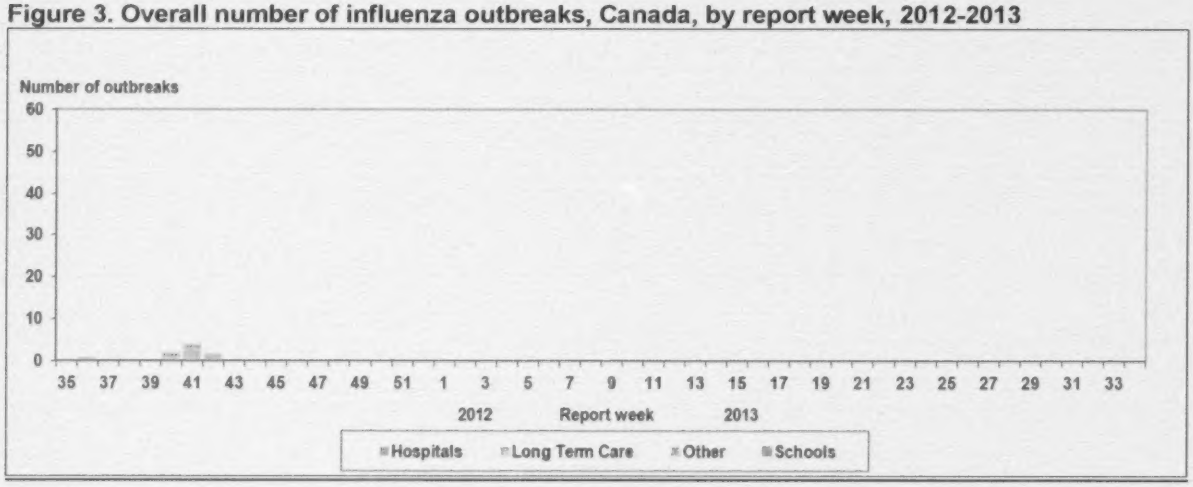
Note: Influenza activity levels, as represented on this map, are assigned and reported by Provincial and Territorial Ministries of Health, based on laboratory confirmations, sentinel ILI rates (see graphs and tables) and reported outbreaks. Please refer to detailed definitions on the last page. For areas where no data is reported, late reports from these provinces and territories will appear on the FluWatch website.

Figure 2. Number of influenza surveillance regions† reporting widespread or localized influenza activity, Canada, by report week, 2012-2013 (Total number of influenza surveillance regions in Canada=58)



† sub-regions within the province or territory as defined by the provincial/territorial epidemiologist. Graph may change as late returns come in.

Figure 3. Overall number of influenza outbreaks, Canada, by report week, 2012-2013



Influenza and Other Respiratory Virus Detections

The percentage of positive influenza tests declined slightly from the previous week from 1.2% in week 41 to 0.9% in week 42 (Figures 4 and 5). All of the influenza viruses detected this week (n=17) were positive for influenza A viruses (of which 47.1% were A(H3), 5.9% were A(H1N1)pdm09 and 47.1% were A unsubtyped) (Table 1).

Cumulative influenza virus detections by type/subtype to date are as follows: 93.3% influenza A (54.3% - A(H3), 10.0% - A(H1N1)pdm09 and 35.7% - unsubtyped) and 6.7% influenza B (Table 1).

Detailed information on age and type/subtype were received on 58 cases to date this season (Table 2).The proportions of cases by age group were as follows: 12.1% were < 5 years; 6.9% were between 5-19 years; 19.0% were between 20-44 years; 13.8% were between 45-64 years of age; 48.3% were ≥ 65 years.

The percentage positive for rhinovirus detections increased slightly from the previous week (23.4% in week 42) and remains the highest compared to the other respiratory viruses. The percentage positive for the other respiratory viruses in week 42 remained low: RSV-1.9%; parainfluenza-2.9%; adenovirus-1.0%; hMPV-0.2%; and coronavirus-1.2% (Figure 5). For more details, see the weekly Respiratory Virus Detections in Canada Report.

Table 1. Weekly & Cumulative numbers of positive influenza specimens by Provincial Laboratories, Canada, 2012-2013

Reporting provinces	October 14 to October 20, 2012						Cumulative (August 26, 2012 to October 20, 2012)					
	Influenza A					B	Influenza A					B
	A Total	A(H1)	A(H3)	Pand H1N1	A (UnS)*	Total	A Total	A(H1)	A(H3)	Pand H1N1	A (UnS)*	Total
BC	1	0	1	0	0	0	6	0	4	0	2	0
AB	6	0	3	1	2	0	25	0	12	7	6	1
SK	1	0	0	0	1	0	2	0	0	0	2	1
MB	0	0	0	0	0	0	3	0	3	0	0	0
ON	7	0	4	0	3	0	28	0	18	0	10	1
QC	1	0	0	0	1	0	4	0	0	0	4	2
NB	0	0	0	0	0	0	0	0	0	0	0	0
NS	0	0	0	0	0	0	0	0	0	0	0	0
PE	0	0	0	0	0	0	0	0	0	0	0	0
NL	1	0	0	0	1	0	2	0	1	0	1	0
Canada	**17**	**0**	**8**	**1**	**8**	**0**	**70**	**0**	**38**	**7**	**25**	**5**

*Unsubtyped: The specimen was typed as influenza A, but no test for subtyping was performed. Specimens from NT, YT, and NU are sent to reference laboratories in other provinces. Note: Weekly data is based on week of positive lab detection. Cumulative data includes updates to previous weeks; due to reporting delays, the sum of weekly report totals do not add up to cumulative totals.

Table 2. Weekly & Cumulative numbers of positive influenza specimens by age groups reported through case-based laboratory reporting, Canada, 2012-2013*

Age groups	Weekly (October 14 to October 20, 2012)					Cumulative (Aug. 26, 2012 to October 20, 2012)				
	Influenza A				B	Influenza A				B
	A Total	Pandemic H1N1	A/H3N2	A unsubtyped	Total	A Total	Pandemic H1N1	A/H3N2	A unsubtyped	Total
<5	0	0	0	0	0	6	1	5	0	1
5-19	4	0	2	2	0	4	0	2	2	0
20-44	1	1	0	0	0	11	3	4	4	0
45-64	1	0	1	0	0	6	1	2	3	2
65+	5	0	1	4	0	27	2	17	8	1
Unknown	0	0	0	0	0	0	0	0	0	0
Total	11	1	4	6	0	54	7	30	17	4

*Please note that this table reflects the number of specimens for which demographic information was reported. These represent a subset of all positive influenza cases reported. Delays in the reporting of data may cause data to change retrospectively.

Figure 4. Influenza tests reported and percentage of tests positive, Canada, by report week, 2012-2013

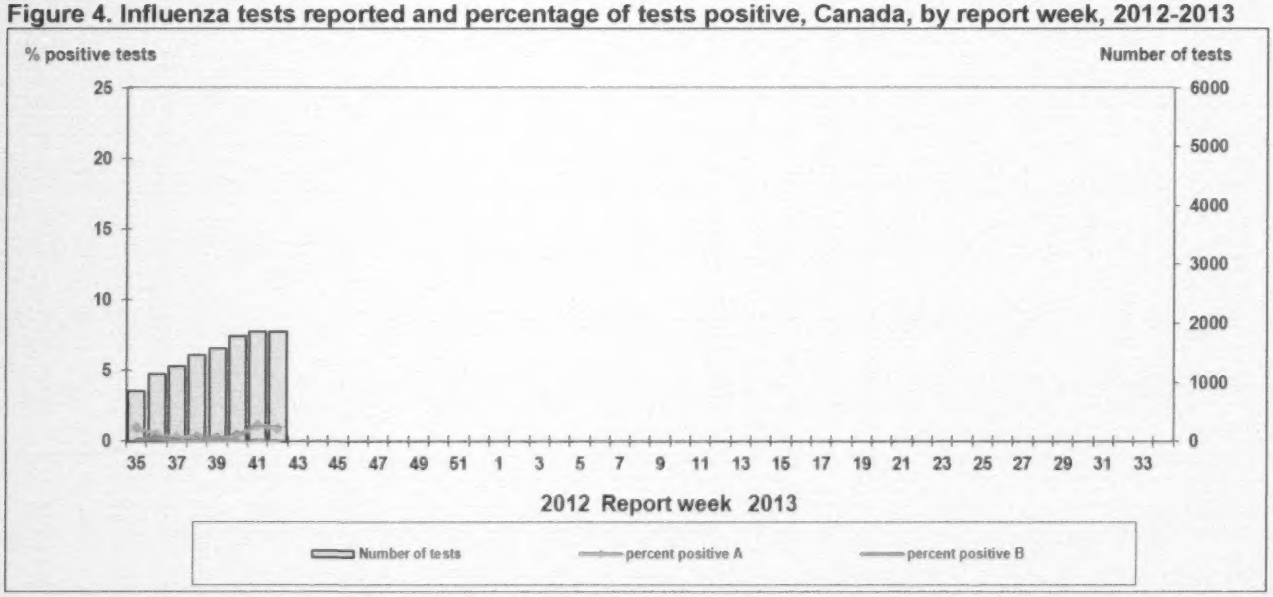
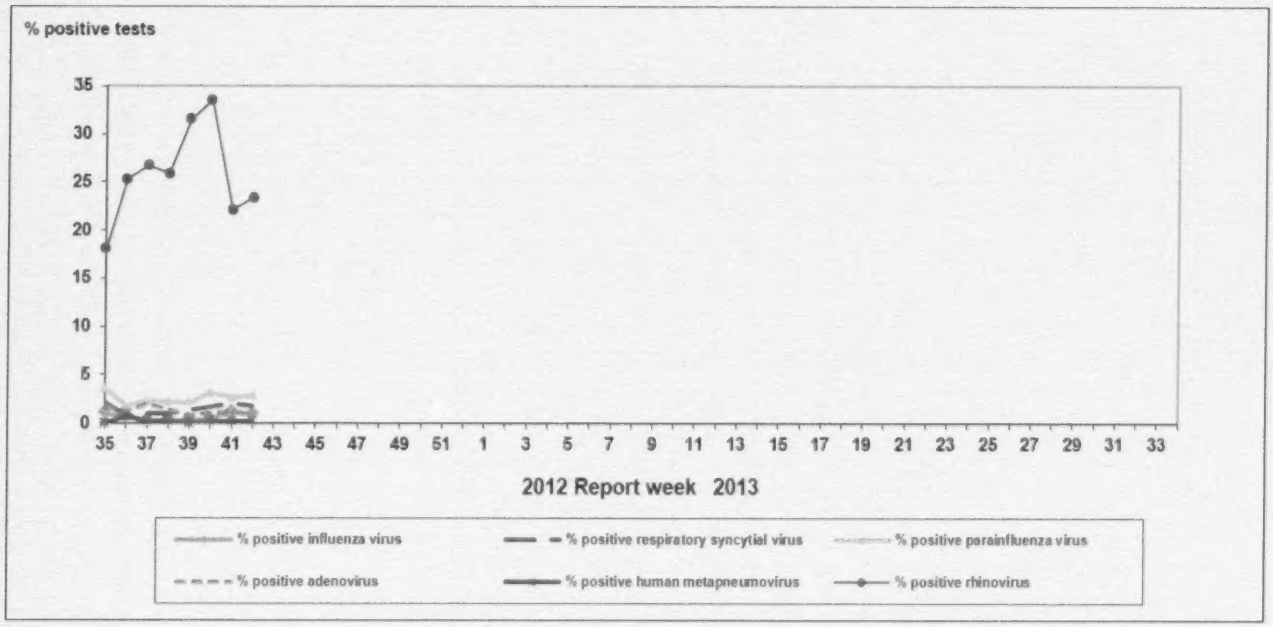


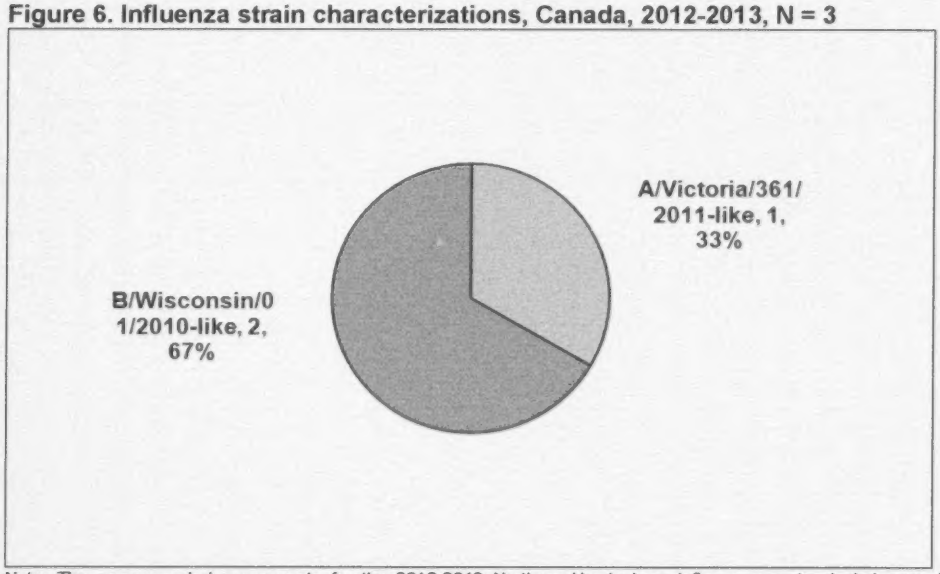
Figure 5. Percent positive influenza tests, compared to other respiratory viruses, Canada, by reporting week, 2012-2013



Influenza Strain Characterizations

Since the start of the season, the National Microbiology Laboratory (NML) has antigenically characterized 3 influenza viruses [1 A(H3N2) and 2 B]. The influenza A(H3N2) virus (from BC) was antigenically similar to the vaccine strain A/Victoria/361/2011. Both of the influenza B viruses (from ON & QC) were antigenically similar to the vaccine strain B/Wisconsin/01/2010 (Yamagata lineage). (Figure 6)

Figure 6. Influenza strain characterizations, Canada, 2012-2013, N = 3



Note: The recommended components for the 2012-2013 Northern Hemisphere influenza vaccine include: an A/Victoria/361/2011 (H3N2)-like virus; an A/California/7/2009 (H1N1)pdm09-like virus; and a B/Wisconsin/1/2010-like virus.

Antiviral Resistance

Since the beginning of the season, NML has tested 3 influenza viruses [1 A(H3N2) and 2 B] for resistance to oseltamivir and zanamivir and it was found that all were sensitive to oseltamivir and zanamivir. A total of 6 influenza A(H3N2) viruses were tested for amantadine resistance and all were resistant (Table 3).

Table 3. Antiviral resistance by influenza virus type and subtype, Canada, 2012-2013

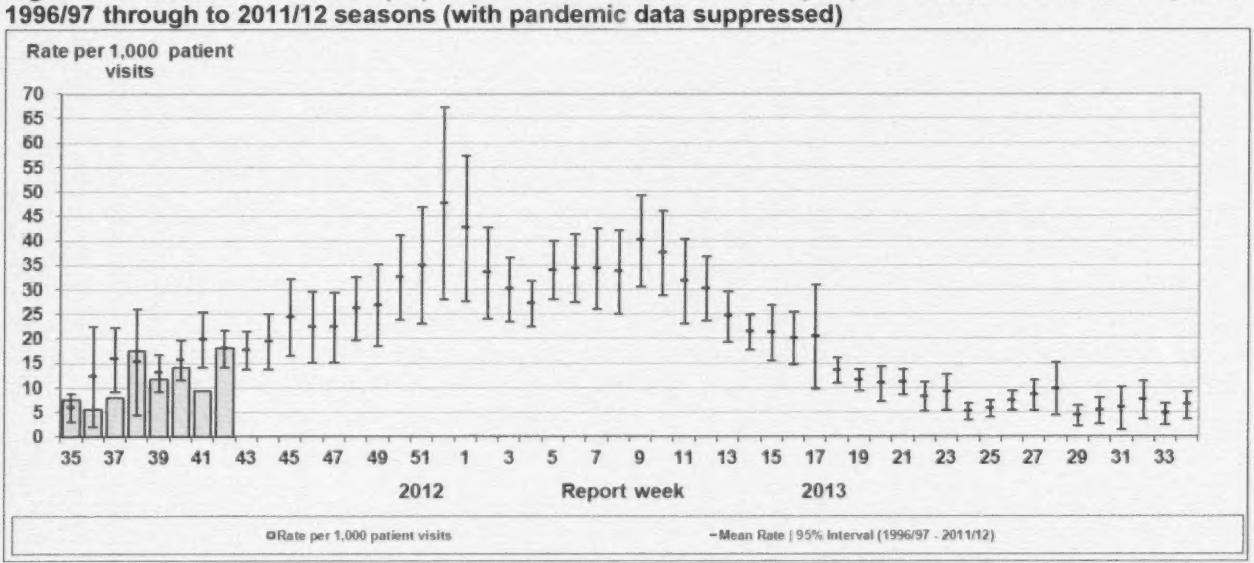
Virus type and subtype	Oseltamivir		Zanamivir		Amantadine	
	# tested	# resistant (%)	# tested	# resistant (%)	# tested	# resistant (%)
A (H3N2)	1	0	1	0	6	6 (100%)
A (H1N1)	0	0	0	0	0	0
B	2	0	2	0	NA*	NA*
TOTAL	3	0	3	0	6	6 (100%)

* NA – not applicable

Influenza-like Illness Consultation Rate

The national influenza-like-illness (ILI) consultation rate in week 42 increased from the previous week to 18.0 ILI consultations per 1,000 patient visits and is within the expected levels for this time of year (Figure 7). The highest consultation rates were observed in those less than 5 years of age (30.5/1,000) and those ≥65 years of age (20.2/1,000).

Figure 7. Influenza-like illness (ILI) consultation rates, Canada, by report week, 2012-2013 compared to 1996/97 through to 2011/12 seasons (with pandemic data suppressed)



Note: No data available for mean rate in previous years for weeks 19 to 39 (1996-1997 through 2002-2003 seasons). Delays in the reporting of data may cause data to change retrospectively.

Severe Respiratory Illness Surveillance

Paediatric Influenza Hospitalizations and Deaths (IMPACT)

No laboratory-confirmed influenza-associated paediatric (16 years of age and under) hospitalizations have been reported by the Immunization Monitoring Program Active (IMPACT) network since the start of the 2012-2013 influenza season.

Influenza Hospitalizations and Deaths (Aggregate Surveillance System)
In week 42, one laboratory-confirmed influenza A-associated hospitalization was reported (from NL). The case was ≥65 years of age.

To date this season, 6 influenza A-associated hospitalizations have been reported from 3 provinces (AB, ON & NL); all were ≥ 65 years of age. Of the influenza A hospitalizations where subtype was available (4), 50% were due to influenza A(H1N1)pdm09 and 50% were due to A(H3N2). There has been one hospitalisation for which admission to ICU was required (from NL). To date this season, no influenza-associated deaths have been reported.

Note: Influenza-associated hospitalizations are not reported to PHAC by the following Provinces and Territory: BC, NU, QC, NS, & NB. Only hospitalizations that require intensive medical care are reported by SK. ICU admissions are not reported in ON.

International Influenza Updates

WHO: Many countries of the Northern Hemisphere temperate region are reporting increasing sporadic detections of influenza viruses but numbers are still low. A few countries in tropical areas have experienced active transmission on influenza in recent weeks; most notable are Nicaragua and Costa Rica in the Americas, where influenza B has been the most commonly detected virus in recent weeks, and Sri Lanka, Nepal, and Thailand in Asia, where influenza A(H1N1)pdm09 has been slightly more common than influenza B. In Sub-Saharan Africa, countries of West (Senegal and Cote d'Ivoire) and Central Africa (Cameroon) have reported increasing detections of influenza virus, primarily A(H3N2). Influenza activity in most areas of temperate countries in the Southern Hemisphere are now at inter-seasonal levels.
World Health Organization influenza update

United States: The proportion of tests positive for influenza viruses increased slightly in week 41 (3.9%) compared to the previous week. Of the positive influenza detections reported during week 41, 53% were positive for influenza B viruses. Of the 30 influenza A viruses for which subtype information was available, 87% were A(H3) and 13% were A(H1N1)pdm09. One influenza A-associated pediatric death was reported in week 41. All other indicators of influenza activity remained low. *Centers for Disease Control and Prevention seasonal influenza report*

Europe: In week 42, influenza activity in Europe remained low. A total of 40 specimens tested positive for influenza in week 42: 29 (72.5%) were influenza A (31% were A(H3N2), 14% were A(H1N1)pdm09 and 55% were A un-subtyped) and 27.5% were influenza B. ILI and ARI consultation rates are at usual levels for this time of year.
EuroFlu weekly electronic bulletin

Human Avian and Swine Influenza Updates

Human Avian Influenza
No cases of human avian influenza A/H5N1 infection have been reported by the WHO since August 10, 2012.
WHO Avian influenza situation updates

Human Swine Influenza
No new human cases of infection with swine influenza viruses or variants were reported this week.

FluWatch reports include data and information from the following sources: laboratory reports of positive influenza tests in Canada (National Microbiology Laboratory), sentinel physician reporting of influenza-like illness (ILI), provincial/territorial assessment of influenza activity based on various indicators, including laboratory surveillance, ILI reporting, and outbreaks, influenza-associated paediatric and adult hospitalizations, antiviral sales in Canada, and WHO and other international reports of influenza activity.

Abbreviations: Newfoundland/Labrador (NL), Prince Edward Island (PE), New Brunswick (NB), Nova Scotia (NS), Quebec (QC), Ontario (ON), Manitoba (MB), Saskatchewan (SK), Alberta (AB), British Columbia (BC), Yukon (YT), Northwest Territories (NT), Nunavut (NU).

ILI definition for the 2012-2013 season

ILI in the general population: Acute onset of respiratory illness with fever and cough and with one or more of the following - sore throat, arthralgia, myalgia, or prostration which is likely due to influenza. In children under 5, gastrointestinal symptoms may also be present. In patients under 5 or 65 and older, fever may not be prominent.

Definitions of ILI/Influenza outbreaks for the 2012-2013 season

Schools: Greater than 10% absenteeism (or absenteeism that is higher (e.g. >5-10%) than expected level as determined by school or public health authority) which is likely due to ILI. Note: it is recommended that ILI school outbreaks be laboratory confirmed at the beginning of influenza season as it may be the first indication of community transmission in an area.

Hospitals and residential institutions: two or more cases of ILI within a seven-day period, including at least one laboratory confirmed case. Institutional outbreaks should be reported within 24 hours of identification. Residential institutions include but not limited to long-term care facilities (LTCF) and prisons.

Workplace: Greater than 10% absenteeism on any day which is most likely due to ILI.

Other settings: two or more cases of ILI within a seven-day period, including at least one laboratory confirmed case; i.e. closed communities.

Influenza Activity Levels Definition for the 2012-2013 season

Influenza Regional Activity levels are defined as:

1 = No activity: no laboratory-confirmed influenza detections in the reporting week, however, sporadically occurring ILI may be reported

2 = Sporadic: sporadically occurring ILI and lab confirmed influenza detection(s) with **no outbreaks** detected within the influenza surveillance region†

3 = Localized: (1) evidence of increased ILI* and
(2) lab confirmed influenza detection(s) together with
(3) **outbreaks** in schools, hospitals, residential institutions and/or other types of facilities occurring in **less than 50% of the influenza surveillance region**†

4 = Widespread: (1) evidence of increased ILI* and
(2) lab confirmed influenza detection(s) together with
(3) **outbreaks** in schools, hospitals, residential institutions and/or other types of facilities occurring **in greater than or equal to 50% of the influenza surveillance region**†

Note: ILI data may be reported through sentinel physicians, emergency room visits or health line telephone calls.

* More than just sporadic as determined by the provincial/territorial epidemiologist.

† Influenza surveillance regions within the province or territory as defined by the provincial/territorial epidemiologist.

We would like to thank all the Fluwatch surveillance partners who are participating in this year's influenza surveillance program.

This report is available on the Public Health Agency website at the following address: http://www.phac-aspc.gc.ca/fluwatch/index.html. Ce rapport est disponible dans les deux langues officielles.